

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Davide MANDATO

U.S. Serial No.: Filed Concurrently Herewith

Title of Invention: A UNIVERSAL QoS ADAPTATION FRAMEWORK  
FOR MOBILE MULTIMEDIA APPLICATIONS

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**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Box Patent Application (35 U.S.C. 111)  
Washington, D.C. 20231

Sir:

Before the issuance of the first Office Action, please amend the above-identified application as follows:

**IN THE CLAIMS:**

Please amend claims 4, 5, 7, 9, 11, 15, 17, 19, 24, 25, 27, 29, 31, 35, 37 and 39 as follows:

4. (Amended) Processing system according to claim 1,

characterised in,

that said generic framework bases on a modular progressive approach to address different types of applications which span from existing application to envisioned more sophisticated applications that rely on middleware for achieving cross-adaptability.

5. (Amended) Processing system according to claim 1,

characterised in,

that said generic framework bases on an application model in which each application is allocated to one of a set of application classes having different QoS level with respect to resource usage.

7. (Amended) Processing system according to claim 5,

characterised in,

said generic framework bases on a communication model with different functional communication levels for exploiting the various resources in a coordinated manner so as to achieve the desired overall QoS level.

9. (Amended) Processing system according to claim 1,

characterised by

a QoS broker unit (8) being managed by the component coordinator unit (10) and coordinating local and remote resource management by using said negotiation and renegotiation protocol.

11. (Amended) Processing system according to claim 9,

characterised by

a session manager unit (11) being directly coordinated by the QoS broker unit (8) for establishing and managing sessions in an implementation independent way.

15. (Amended) Processing system according to claim 12,

characterised by

one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

17. (Amended) Processing system according to claim 12,

characterised by

one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

19. (Amended) Processing system according to claim 12,

characterised by

one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

24. (Amended) Pieces of software according to claim 21,

characterised in,

that said generic framework bases on a modular progressive approach to address different types of applications which span from existing applications to envisioned more sophisticated applications that rely on middleware for achieving cross-adaptability.

25. (Amended) Pieces of software according to claim 21,

characterised in,

that said generic framework bases on an application model in which each application is allocated to one of a set of application classes having different QoS level with respect to resource usage.

27. (Amended) Pieces of software according to claim 25,

characterised in,

said generic framework bases on a communication model with different functional communication levels for exploiting the various resources in a coordinated manner so as to achieve the desired overall QoS level.

29. (Amended) Pieces of software according to claim 22, characterised by a QoS broker unit (8) being managed by the component coordinator unit (10) and coordinating local and remote resource management by using said negotiation and renegotiation protocol.

31. (Amended) Pieces of software according to claim 29, characterised by a session manager unit (11) being directly coordinated by the QoS broker unit (8) for establishing and managing sessions in an implementation independent way.

35. (Amended) Pieces of software according to claim 32, characterised by one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

37. (Amended) Pieces of software according to claim 32, characterised by one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

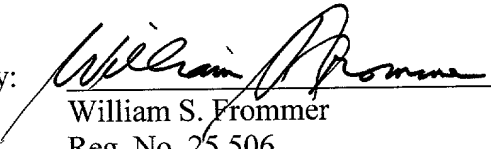
39. (Amended) Pieces of software according to claim 32, characterised by one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

**REMARKS**

Claims 1-40 remain in the application. Claims 4, 5, 7, 9, 11, 15, 17, 19, 24, 25, 27, 29, 31, 35, 37 and 39 have been amended to eliminate multiple dependencies. Attached hereto is a marked up version of the changes made to claims 4, 5, 7, 9, 11, 15, 17, 19, 24, 25, 27, 29, 31, 35, 37 and 39 by the current amendment. The attached page is captioned **“Version with markings to show changes made.”** The filing fee has been calculated based upon these amendments to the claims.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE****In the claims:**

4. (Amended) Processing system according to claim 1, ~~2 or 3~~,

characterised in,

that said generic framework bases on a modular progressive approach to address different types of applications which span from existing application to envisioned more sophisticated applications that rely on middleware for achieving cross-adaptability.

5. (Amended) Processing system according to ~~one of the claims 1 to 4~~ claim 1,

characterised in,

that said generic framework bases on an application model in which each application is allocated to one of a set of application classes having different QoS level with respect to resource usage.

7. (Amended) Processing system according to claim 5 ~~or 6~~,

characterised in,

said generic framework bases on a communication model with different functional communication levels for exploiting the various resources in a coordinated manner so as to achieve the desired overall QoS level.

9. (Amended) Processing system according to ~~one of the claims 1 to 8~~ claim 1,

characterised by

a QoS broker unit (8) being managed by the component coordinator unit (10) and coordinating local and remote resource management by using said negotiation and renegotiation protocol.

11. (Amended) Processing system according to claim 9 ~~or 10~~,

characterised by

a session manager unit (11) being directly coordinated by the QoS broker unit (8) for establishing and managing sessions in an implementation independent way.

15. (Amended) Processing system according to ~~one of the claims 12 to 14~~ claim 12, characterised by

one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

17. (Amended) Processing system according to ~~one of the claims 12 to 16~~ claim 12, characterised by

one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

19. (Amended) Processing system according to ~~one of the claims 12 to 18~~ claim 12, characterised by

one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

24. (Amended) Pieces of software according to claim 21, ~~22 or 23~~, characterised in,

that said generic framework bases on a modular progressive approach to address different types of applications which span from existing applications to envisioned more sophisticated applications that rely on middleware for achieving cross-adaptability.

25. (Amended) Pieces of software according to ~~one of the claims 21 to 24~~, claim 21, characterised in,

that said generic framework bases on an application model in which each application is allocated to one of a set of application classes having different QoS level with respect to resource usage.

27. (Amended) Pieces of software according to claim 25 ~~or 26~~,

characterised in,

said generic framework bases on a communication model with different functional communication levels for exploiting the various resources in a coordinated manner so as to achieve the desired overall QoS level.

29. (Amended) Pieces of software according to ~~one of the claims 22 to 28~~ claim 22,

characterised by

a QoS broker unit (8) being managed by the component coordinator unit (10) and coordinating local and remote resource management by using said negotiation and renegotiation protocol.

31. (Amended) Pieces of software according to claim 29 ~~or 30~~,

characterised by

a session manager unit (11) being directly coordinated by the QoS broker unit (8) for establishing and managing sessions in an implementation independent way.

35. (Amended) Pieces of software according to ~~one of the claims 32 to 34~~ claim 32,

characterised by

one or more memory manager units (14) coordinated by the chain coordinator units (12) for managing memory resource usage.

37. (Amended) Pieces of software according to ~~one of the claims 32 to 36~~ claim 32,

characterised by

one or more network protocol manager units (15) coordinated by the chain coordinator units (12) for managing network protocol resource usage.

39. (Amended) Pieces of software according to ~~one of the claims 32 to 38~~ claim 32,

characterised by



one or more multimedia components (16) coordinated by the chain coordinator units (12) for managing multimedia resources.

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